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BELL, BOYD & LLOYD, LLP
P.O. BOX 1135
CHICAGO, IL 60690

EXAMINER	
BELANI, KISHIN G	

ART UNIT	PAPER NUMBER
2143	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/502,437	PRIEM, XAVIER	
	Examiner	Art Unit	
	KISHIN G. BELANI	2143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 July 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 July 2004* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/22/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statement submitted on 07-22-2004 has been considered by the Examiner and made of record in the application file.

Preliminary Amendment

The present Office Action is based upon the original patent application filed on 07/22/2004 as modified by the preliminary amendment filed on 07/22/2004. **Claims 8-24 are now pending** in the present application.

Drawings

The drawings are objected to because of the following minor informalities:

- In Figs. 9, 12, 13 and 16, the x and y axes are not labeled for what they represent.
- The purpose of showing Fig. 10 is not clear. The last sentence seems to terminate abruptly.

- In Fig. 11, the y axis of various plots is not labeled for what it represents. Also, it is not clear what is represented along the x axis marked DCPU, CMEM, DIOS, P09P0V and CP0V. Why is the bottom right plot left blank?
- In Fig. 14, the "no" branch of the decision block is left hanging.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The disclosure is objected to because of the following informalities:

- On page 5, paragraph 3, line 3, replace "neuronal" by – neural --

- On page 12, paragraph 2, line 1, replace "is should" by – should –
- On page 13, paragraph 3, line 1, replace "fur" by – for –
- On page 16, section 1.1.1.2.6, line 10, replace "prognostic" by – prognosis –
- On page 19, section 1.1.1.3.3, next to the last line, replace "Lets" by – Let us –
- On page 21, section 1.1.1.3.4, line 7, replace "(y axe)" by – (y axis) --
- There are insertion errors on pages 16 (section 1.1.1.3), page 19 (section 1.1.1.3.3 -- three places), page 20 (section 1.1.1.3.4), page 23 (section 1.1.1.4.2), page 24 (section 1.2 -- two places). These errors make the disclosure incomprehensible. The examiner has made his best effort to complete the office action in order to further advance the prosecution. However, the examiner would like the applicant to resubmit a complete disclosure free of the errors and informalities listed above.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 9 and its dependent claims 10, 11, 13, 14, 16, 17 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9 is dependent on the independent claim 8. It therefore inherits all the limitations of claim 8, including "running an overload operation mode of the data processing system". However, in claim 9, a further limitation includes "running a normal operation mode of the data processing system". This makes claim 9 and all its dependent claims 10, 11, 13, 14, 16-18 indefinite, as it is not clear which mode these claims are running under.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8, 9, 20, 21, 23 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by **Barone (US Patent Publication # 6,230,152 B1).**

Consider **claim 8**, Barone shows and discloses a method for controlling overload of a data processing system (abstract that discloses a method for managing a plurality of queues for processing telecommunication service requests, using a fuzzy logic controller for a queue manager, such that queues don't become overloaded; Figs. 1-2 and column 1, lines 31-67 to column 2, lines 1-31 also show and disclose the same

details), comprising:

monitoring a load of the data processing system, wherein parameters for a degree of utilization of resources of the data processing system are determined (column 2, lines 55-67 to column 3, lines 1-4 which disclose a fuzzy logic controller that acts as a watchdog expert system monitoring the queuing environment by determining the optimum values of three parameters Q (queue sizes), T (time delay between servicing each element of a queue), and S (time delay between servicing each successive queue), the determined optimum value of these parameters at each iteration of queue element processing controls the queue sizes and therefore a degree of utilization of resources of the queue processing system);

running an overload operation mode of the data processing system (column 2, lines 42-46 which disclose that providing a mechanism that dynamically adjusts the Q, T and S parameters in an overload operation mode will properly balance the drain queue load and optimize drainer performance in the face of unpredictable real-time demands);

feeding the parameters into a fuzzy logic expert system, which comprises a fuzzy rule base having rules and associated fuzzy logic variables (column 3, lines 39-67 to column 4, lines 1-8 which describe providing input parameters to the fuzzy logic rules that drive the controllers; the rules determine how the parameters Q, T and S are to be adjusted for the next successive epoch; column 5, lines 42-67 to column 6, lines 1-64 disclose a rules base for each of the three parameters);

identifying important rules among said rule base in accordance with the parameters via the fuzzy logic expert system (column 4, lines 14-61 which identify important rules

associated with the parameters using the fuzzy logic expert system);
calculating values for the fuzzy logic variables, which are associated with the important rules (Figs. 3a-3b; column 4, lines 62-67 to column 5, lines 1-41 that describe calculations for the fuzzy logic variables associated with the important rules); and handling the overload based on the identified rules and the calculated values of the associated fuzzy logic variables (flowchart of Fig. 4; column 6, lines 65-67 to column 8, lines 1-13 that further disclose handling the overload based on the identified rules and the calculated parameter values of the associated fuzzy logic variables).

Consider **claim 9**, and **as it applies to claim 8 above,** Barone shows and discloses the claimed method, further comprising:
running a normal operation mode of the data processing system (flowchart of Fig. 6, step 295; column 11, lines 27-36 which disclose that the fuzzy controller uses rule 20 for the special case where the number of undrained queues is zero, thereby indicating no overload or a normal operation mode; in such a case, the throttle time parameter T is set to its normal default value).

Consider **claim 20**, and **as it applies to claim 8 above,** Barone shows and discloses the claimed method, wherein the method is performed by a data processing system (Fig. 1 that shows a data processing system with a remote mainframe host 75 and a plurality of LMOS (Loop Management Operating Systems) front end systems 50a-50n, that deploy SMC (Screening maintenance centers) 80a-80n, with embedded

rule-based expert systems 90a-90n; column 1, lines 13-42 that describe the same details).

Consider **claim 21**, Barone shows and discloses a method for controlling overload of a data processing system (abstract that discloses a method for managing a plurality of queues for processing telecommunication service requests, using a fuzzy logic controller for a queue manager, such that queues don't become overloaded; Figs. 1-2 and column 1, lines 31-67 to column 2, lines 1-31 also show and disclose the same details), comprising:

monitoring a load of the data processing system, wherein parameters for a degree of utilization of resources of the data processing system are determined (column 2, lines 55-67 to column 3, lines 1-4 which disclose a fuzzy logic controller that acts as a watchdog expert system monitoring the queuing environment by determining the optimum values of three parameters Q (queue sizes), T (time delay between servicing each element of a queue), and S (time delay between servicing each successive queue), the determined optimum value of these parameters at each iteration of queue element processing controls the queue sizes and therefore a degree of utilization of resources of the queue processing system);

feeding the parameters into a fuzzy logic expert system, which comprises a fuzzy rule base having rules and associated fuzzy logic variables (column 3, lines 39-67 to column 4, lines 1-8 which describe providing input parameters to the fuzzy logic rules that drive the controllers; the rules determine how the parameters Q, T and S are to be adjusted

for the next successive epoch; column 5, lines 42-67 to column 6, lines 1-64 disclose a rules base for each of the three parameters);
identifying important rules among said rule base in accordance with the parameters via the fuzzy logic expert system (column 4, lines 14-61 which identify important rules associated with the parameters using the fuzzy logic expert system);
calculating values for the fuzzy logic variables, which are associated with the important rules (Figs. 3a-3b; column 4, lines 62-67 to column 5, lines 1-41 that describe calculations for the fuzzy logic variables associated with the important rules); and
handling the overload based on the identified rules and the calculated values of the associated fuzzy logic variables (flowchart of Fig. 4; column 6, lines 65-67 to column 8, lines 1-13 that further disclose handling the overload based on the identified rules and the calculated parameter values of the associated fuzzy logic variables).

Consider **claim 23**, and **as it applies to claim 21 above,** Barone shows and discloses the claimed method, wherein the method is performed by a data processing system (Fig. 1 that shows a data processing system with a remote mainframe host 75 and a plurality of LMOS (Loop Management Operating Systems) front end systems 50a-50n, that deploy SMC (Screening maintenance centers) 80a-80n, with embedded rule-based expert systems 90a-90n; column 1, lines 13-42 that describe the same details).

Consider **claim 24**, Barone shows and discloses a data processing system, comprising a mechanism for performing a method for controlling overload (abstract that discloses a fuzzy logic controller for a queue manager that services a plurality of queues for processing telecommunication service requests, such that queues don't become overloaded; Figs. 1-2 and column 1, lines 31-67 to column 2, lines 1-31 also show and disclose the same details, including a host 75 (in Fig. 1) for the data processing system), comprising:

monitoring a load of the data processing system, wherein parameters for a degree of utilization of resources of the data processing system are determined (column 2, lines 55-67 to column 3, lines 1-4 which disclose a fuzzy logic controller that acts as a watchdog expert system monitoring the queuing environment by determining the optimum values of three parameters Q (queue sizes), T (time delay between servicing each element of a queue), and S (time delay between servicing each successive queue), the determined optimum value of these parameters at each iteration of queue element processing controls the queue sizes and therefore a degree of utilization of resources of the queue processing system);

running an overload operation mode of the data processing system (column 2, lines 42-46 which disclose that providing a mechanism that dynamically adjusts the Q, T and S parameters in an overload operation mode will properly balance the drain queue load and optimize drainer performance in the face of unpredictable real-time demands);

feeding the parameters into a fuzzy logic expert system, which comprises a fuzzy rule base having rules and associated fuzzy logic variables (column 3, lines 39-67 to column

4, lines 1-8 which describe providing input parameters to the fuzzy logic rules that drive the controllers; the rules determine how the parameters Q, T and S are to be adjusted for the next successive epoch; column 5, lines 42-67 to column 6, lines 1-64 disclose a rules base for each of the three parameters);

identifying important rules among said rule base in accordance with the parameters via the fuzzy logic expert system (column 4, lines 14-61 which identify important rules associated with the parameters using the fuzzy logic expert system);

calculating values for the fuzzy logic variables, which are associated with the important rules (Figs. 3a-3b; column 4, lines 62-67 to column 5, lines 1-41 that describe calculations for the fuzzy logic variables associated with the important rules); and

handling the overload based on the identified rules and the calculated values of the associated fuzzy logic variables (flowchart of Fig. 4; column 6, lines 65-67 to column 8, lines 1-13 that further disclose handling the overload based on the identified rules and the calculated parameter values of the associated fuzzy logic variables).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness
or nonobviousness.

Claims 10, 11, 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Barone (US Patent Publication # 6,230,152 B1)** in view of **Bhaskaran et al. (US Patent Publication # 6,601,084 B1).**

Consider **claim 10**, and **as it applies to claim 9 above,** Barone shows and discloses the claimed method, except further comprising monitoring the load of said data processing system; determining parameters for said degree of utilization of resources of the data processing system in both the normal operation mode and the overload operation mode; feeding the parameters into the fuzzy logic expert system; determining additional application specific parameters, which refer to the degree of utilization of resources by applications running on the data processing system, in the overload operation mode; and feeding the application specific parameters into the fuzzy logic expert system.

In the same field of endeavor, Bhaskaran et al. disclose the claimed method (abstract; Fig. 4 that shows a block diagram of a load balancer 400, column 4, lines 16-18 further describe the load balancer; column 10, lines 47-49 disclose that a fuzzy logic controller with a set of rules for bucket (clients' requests) selection is used); further comprising:

monitoring the load of said data processing system (column 4, lines 29-30 which disclose that a load estimator 460 (in Fig. 4) monitors load for each server);
determining parameters for said degree of utilization of resources of the data processing system in both the normal operation mode and the overload operation mode (column 4, lines 30-35 which disclose a credit calculator 450 determines the degree of utilization of resources by calculating the amount of free resources or credit that each server has remaining from the load estimates provided by the load estimator 460; and a skew detector 440 that uses the credit of each server to determine whether the load balancing between the servers is in a tolerable range (normal operation mode) or outside the tolerable range (overload operation mode));
feeding the parameters into the fuzzy logic expert system (column 10, lines 47-49 which disclose that a fuzzy logic controller with a set of rules for bucket (clients' requests) selection is used, thereby disclosing feeding the parameters (for next client request selection) into the fuzzy logic expert system);
determining additional application specific parameters, which refer to the degree of utilization of resources by applications running on the data processing system, in the overload operation mode (column 9, lines 28-67 to column 10, lines 1-49 which disclose that common measures of load on a server are based on the number of data requests, number of bytes of data received/sent, the processor (CPU) and memory utilization on the server, that are application specific parameters; further disclosing that skew detector 440 determines when the load on the servers are skewed, i.e. unbalanced, causing overload; the skew detector comparing a measure of skewness against a skew

threshold, and if the value exceeds the threshold, forcing bucket controller 430 to change the granularity of the buckets to reduce the load on the server); and feeding the application specific parameters into the fuzzy logic expert system (column 10, lines 47-49 which disclose that a fuzzy logic controller with a set of rules for bucket (clients' requests) selection is used, thereby disclosing feeding the application specific parameters into the fuzzy logic expert system).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to monitor the load of said data processing system; determine parameters for said degree of utilization of resources of the data processing system in both the normal operation mode and the overload operation mode; feed the parameters into the fuzzy logic expert system; determine additional application specific parameters, which refer to the degree of utilization of resources by applications running on the data processing system, in the overload operation mode; and feed the application specific parameters into the fuzzy logic expert system, as taught by Bhaskaran et al., in the method of Barone, so as to be able to balance the load on the servers by shifting the workload to other servers in the server farm.

Consider **claim 11**, and **as it applies to claim 10 above,** Barone shows and discloses the claimed method, except further comprising determining an overload level via said fuzzy logic expert system based on the parameters and/or the application specific parameters; and using the overload level as criterion for switching between the normal operation mode and the overload operation mode.

In the same field of endeavor, Bhaskaran et al. disclose the claimed method, further comprising:

determining an overload level via said fuzzy logic expert system based on the parameters and/or the application specific parameters (column 9, lines 28-35 which disclose that common measures of load on a server are based on the number of data requests, number of bytes of data received/sent, the processor (CPU) and memory utilization on the server, that are application specific parameters; column 10, lines 14-17 which disclose that skew detector 440 determines when the load on the servers are skewed, i.e. unbalanced, causing server overload; the skew detector comparing a measure of skewness against a skew threshold; column 10, lines 47-49 which disclose that a fuzzy logic controller with a set of rules for bucket (clients' requests) selection is used, thereby disclosing feeding the application specific parameters into the fuzzy logic expert system); and

using the overload level as criterion for switching between the normal operation mode and the overload operation mode (column 10, lines 17-21 which disclose that when the skew detector 440 determines that the skewness value exceeds the threshold, it forces the bucket controller 430 to change the granularity of the buckets in order to reduce load on the server).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to determine an overload level via said fuzzy logic expert system based on the parameters and/or the application specific parameters; and use the overload level as criterion for switching between the normal operation mode and

the overload operation mode, as taught by Bhaskaran et al., in the method of Barone, so as to be able to balance the load on the server by shifting the workload to other servers in the server farm.

Consider **claim 17**, and **as it applies to claim 10 above,** Barone, as modified by Bhaskaran et al., shows and discloses the claimed method, including wherein the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load (column 9, lines 30-35 which disclose using common measures of the load on a server based on processor activity (CPU load), memory utilization, and number of data requests (I/O load) to monitor the degree of utilization of server resources).

Consider **claim 18**, and **as it applies to claim 11 above,** Barone, as modified by Bhaskaran et al., shows and discloses the claimed method, including wherein the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load (column 9, lines 30-35 which disclose using common measures of the load on a server based on processor activity (CPU load), memory utilization, and number of data requests (I/O load) to monitor the degree of utilization of server resources).

Claims 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Barone (US Patent Publication # 6,230,152 B1)** in view of **Kumar (US Patent Publication # 6,640,268 B1).**

Consider **claim 12**, and **as it applies to claim 8 above,** Barone shows and discloses the claimed method, except wherein the monitoring of the load of said data processing system is performed according to a clock rate, which is higher in the overload operation mode than in the normal operation mode.

In the same field of endeavor, Kumar discloses a method, wherein the monitoring of the load of said data processing system is performed according to a clock rate, which is higher in the overload operation mode than in the normal operation mode (column 6, lines 36-50 which discloses periodic polling (monitoring) by a host 100 (shown in Fig. 3) of a peripheral device 102; further disclosing that the host is capable of polling peripherals at different rates (e.g. a faster critical rate CL, and a slower non-critical rate NCL); column 7, lines 1-12 further disclose that the host periodically adjusts the actual polling rates of each peripheral depending upon a computed peripheral activity number (PAN) for each peripheral; in order to affect this dynamic polling mechanism, host 100 stores a set of threshold values that relate a PAN to all polling rates supported by the host; column 7, lines 53-60 further disclose that in order to adjust the polling rate according to a set of threshold values, if the PAN of peripheral device exceeds the threshold for the current polling rate, the polling rate of the peripheral device is adjusted to the highest possible polling rate supporting the new PAN so long as the peripheral is

intrinsically capable of being polled at the higher polling rate, thereby disclosing that the monitoring of the load of said data processing system is performed according to a clock rate, which is higher in the overload operation mode than in the normal operation mode).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to monitor the load of said data processing system according to a clock rate, which is higher in the overload operation mode than in the normal operation mode, as taught by Kumar, in the method of Barone, so as to be able to monitor the overloaded devices more frequently in order to respond quickly when the overload becomes excessive.

Consider **claim 13**, and **as it applies to claim 9 above,** Barone shows and discloses the claimed method, except wherein the monitoring of the load of said data processing system is performed according to a clock rate, which is higher in the overload operation mode than in the normal operation mode.

In the same field of endeavor, Kumar discloses a method, wherein the monitoring of the load of said data processing system is performed according to a clock rate, which is higher in the overload operation mode than in the normal operation mode (column 6, lines 36-50 which discloses periodic polling (monitoring) by a host 100 (shown in Fig. 3) of a peripheral device 102; further disclosing that the host is capable of polling peripherals at different rates (e.g. a faster critical rate CL, and a slower non-critical rate NCL); column 7, lines 1-12 further disclose that the host periodically adjusts the actual

polling rates of each peripheral depending upon a computed peripheral activity number (PAN) for each peripheral; in order to affect this dynamic polling mechanism, host 100 stores a set of threshold values that relate a PAN to all polling rates supported by the host; column 7, lines 53-60 further disclose that in order to adjust the polling rate according to a set of threshold values, if the PAN of peripheral device exceeds the threshold for the current polling rate, the polling rate of the peripheral device is adjusted to the highest possible polling rate supporting the new PAN so long as the peripheral is intrinsically capable of being polled at the higher polling rate, thereby disclosing that the monitoring of the load of said data processing system is performed according to a clock rate, which is higher in the overload operation mode than in the normal operation mode).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to monitor the load of said data processing system according to a clock rate, which is higher in the overload operation mode than in the normal operation mode, as taught by Kumar, in the method of Barone, so as to be able to monitor the overloaded devices more frequently in order to respond quickly when the overload becomes excessive.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Barone (US Patent Publication # 6,230,152 B1)** in view of **Bhaskaran et al. (US Patent Publication # 6,601,084 B1)** and further in view of **Kumar (US Patent Publication # 6,640,268 B1).**

Consider **claim 14**, and **as it applies to claim 10 above,** Barone, as modified by Bhaskaran et al., shows and discloses the claimed method, except wherein the monitoring of the load of said data processing system is performed according to a clock rate, which is higher in the overload operation mode than in the normal operation mode.

In the same field of endeavor, Kumar discloses a method, wherein the monitoring of the load of said data processing system is performed according to a clock rate, which is higher in the overload operation mode than in the normal operation mode (column 6, lines 36-50 which discloses periodic polling (monitoring) by a host 100 (shown in Fig. 3) of a peripheral device 102; further disclosing that the host is capable of polling peripherals at different rates (e.g. a faster critical rate CL, and a slower non-critical rate NCL); column 7, lines 1-12 further disclose that the host periodically adjusts the actual polling rates of each peripheral depending upon a computed peripheral activity number (PAN) for each peripheral; in order to affect this dynamic polling mechanism, host 100 stores a set of threshold values that relate a PAN to all polling rates supported by the host; column 7, lines 53-60 further disclose that in order to adjust the polling rate according to a set of threshold values, if the PAN of peripheral device exceeds the threshold for the current polling rate, the polling rate of the peripheral device is adjusted to the highest possible polling rate supporting the new PAN so long as the peripheral is intrinsically capable of being polled at the higher polling rate, thereby disclosing that the monitoring of the load of said data processing system is performed according to a clock

rate, which is higher in the overload operation mode than in the normal operation mode).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to monitor the load of said data processing system according to a clock rate, which is higher in the overload operation mode than in the normal operation mode, as taught by Kumar, in the method of Barone, as modified by Bhaskaran et al., so as to be able to monitor the overloaded devices more frequently in order to respond quickly when the overload becomes excessive.

Claims 15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Barone (US Patent Publication # 6,230,152 B1)** in view of **Ayyash et al. ("An Expert System Approach to Load Balancing in a Distributed Environment", Circuits and Systems, 1993, IEEE, August 16, 1993, pages 1320-1323.** This reference is listed in the IDS provided by the applicant**).**

Consider **claim 15**, and **as it applies to claim 8 above,** Barone shows and discloses the claimed method, except wherein the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load.

In the same field of endeavor, Ayyash et al. disclose the claimed method, wherein the degree of utilization of at least one of the following resources is monitored in order to balance load for an overloaded data processor: CPU load, memory utilization, I/O load (column 2 of page 2, lines 1-10 which disclose using several criteria

for measuring processor load, including the CPU load (i.e. measuring free CPU time), free available memory (memory utilization) and monitoring keyboard activity (I/O load indicator)).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to monitor the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load, as taught by Ayyash et al., in the method of Barone, so as to be able to balance the load on the processor by shifting the workload to other processors.

Consider **claim 22**, and **as it applies to claim 21 above,** Barone shows and discloses the claimed method, except wherein the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load.

In the same field of endeavor, Ayyash et al. disclose the claimed method, wherein the degree of utilization of at least one of the following resources is monitored in order to balance load for an overloaded data processor: CPU load, memory utilization, I/O load (column 2 of page 2, lines 1-10 which disclose using several criteria for measuring processor load, including the CPU load (i.e. measuring free CPU time), free available memory (memory utilization) and monitoring keyboard activity (I/O load indicator)).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to monitor the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load, as taught

by Ayyash et al., in the method of Barone, so as to be able to balance the load on the processor by shifting the workload to other processors.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Barone (US Patent Publication # 6,230,152 B1)** in view of **Aborn (US Patent Application Publication # 2003/0065703 A1).**

Consider **claim 16**, and **as it applies to claim 9 above,** Barone shows and discloses the claimed method, except wherein the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load.

In the same field of endeavor, Aborn discloses the claimed method, wherein the degree of utilization of at least one of the following resources is monitored in order to balance load for an overloaded data processor: CPU load, memory utilization, I/O load (paragraph 0004 which discloses monitoring load across a server or a server farm using a load capacity detection agent during normal operational mode; paragraph 0017, lines 14-20 which disclose that a management (monitoring) server 108 (shown in Fig. 1a) may monitor CPU utilization, I/O queue length, and memory utilization for the purpose of balancing load on a server or a server farm).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to monitor the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load, as taught

by Aborn, in the method of Barone, so as to be able to balance the load on the processor by shifting the workload to other processors.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over **Barone (US Patent Publication # 6,230,152 B1)** in view of **Kumar (US Patent Publication # 6,640,268 B1)** and further in view of **Ayyash et al. ("An Expert System Approach to Load Balancing in a Distributed Environment", Circuits and Systems, 1993, IEEE, August 16, 1993, pages 1320-1323.** This reference is listed in the IDS provided by the applicant**).**

Consider **claim 19**, and **as it applies to claim 12 above,** Barone, as modified by Kumar, shows and discloses the claimed method, except wherein the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load.

In the same field of endeavor, Ayyash et al. disclose the claimed method, wherein the degree of utilization of at least one of the following resources is monitored in order to balance load for an overloaded data processor: CPU load, memory utilization, I/O load (column 2 of page 2, lines 1-10 which disclose using several criteria for measuring processor load, including the CPU load (i.e. measuring free CPU time), free available memory (memory utilization) and monitoring keyboard activity (I/O load indicator)).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to monitor the degree of utilization of at least one of the following resources is monitored: CPU load, memory utilization, I/O load, as taught by Ayyash et al., in the method of Barone, as modified by Kumar, so as to be able to balance the load on the processor by shifting the workload to other processors.

Conclusion

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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Kishin G. Belani

K.G.B./kgb

February 25, 2008

/Kenny S Lin/
Kenny S Lin
Primary Examiner